

Amendments to the Claims:

This listing of claims will replace all prior versions and listings of the claims in the above-captioned patent application.

Listing of Claims:

Claim 1. (Currently Amended) A clock adjusting device for use with a data reproducing ~~apparatus~~ for apparatus which samples a reproduction signal from a recording medium ~~is sampled~~ synchronizing with a predetermined clock and restores data ~~is restored~~ in accordance with a maximum-likelihood decode algorithm corresponding to a record rule of a partial response using a sample value, said clock adjusting device comprising:

a phase error detecting part detecting a phase error amount of a clock based on a change state of said sample value at a first edge of said reproduction signal on a basis of a reference level;

an offset detecting part detecting an offset amount of said reproduction signal;

a reference level adjusting part adjusting said reference level used by said phase error ~~amount~~ detecting part based on said offset amount detected by said offset detecting part; and

a phase adjusting part adjusting a phase of said clock based on said phase error amount detected by said phase error detecting part,

wherein said offset detecting part comprises:

a monitor sample value generating part generating a monitor edge sample value based on said sample value at a second edge being an opposite side edge to said first edge of said reproduction signal; and

an offset calculating part for calculating, as an offset amount, a change amount of said monitor edge sample value generated by said monitor sample value generating part based on said monitor edge sample value obtained at a predetermined timing.

Claim 2. (Original) The clock adjusting device as claimed in claim 1, wherein said first edge is a leading edge of said reproduction signal, and said second edge is a trailing edge of said reproduction signal.

Claim 3. (Currently Amended) The clock adjusting device as claimed in claim 2, comprising an offset adjusting part adjusting an offset amount obtained by said offset calculating part,

wherein said reference level adjusting part adjusts said reference level used by said phase error amount detecting part based on said offset amount adjusted by said offset adjusting part.

Claim 4. (Original) The clock adjusting device as claimed in claim 1, comprising:

a part detecting said phase error amount based on said change state of a plurality of sample values; and

a phase error switching control part controlling said phase adjusting part so that said phase of said clock is adjusted based on said phase error amount obtained by said phase error detecting part after said phase of said clock is adjusted based on said phase error amount detected by said part.

Claim 5. (Original) An offset detecting device for detecting an offset of a reproduction signal in a data reproducing apparatus that said reproduction signal from a recording medium is sampled synchronizing with a predetermined clock and data is restored using a sample value in accordance with a maximum-likelihood decode algorithm corresponding to a record rule of a partial response, said offset detecting device comprising:

a monitor sample value generating part for generating a monitor edge sample value based on said sample value at a second edge being an opposite side edge of a first edge of said reproduction signal when said reproduction signal is sampled synchronizing with said clock which phase is adjusted to said first edge of said reproduction signal; and

an offset calculating part calculating, as an offset amount of a reproduction signal, a change amount of said monitor edge sample value generated by said sample value generating part on a basis of said monitor edge sample value obtained at a predetermined timing.

Claim 6. (Original) The offset detecting device as claimed in claim 5, wherein said monitor sample value generating part comprises an averaging part averaging a

plurality of sample values at said second edge and generating said monitor edge sample value.

Claim 7. (Currently Amended) The offset detecting device as claimed in claim 5, wherein said monitor edge ~~sample~~ sample value generating part comprises a sample value selecting part selecting two sample values that are used to generate said monitor edge sample value when said two sample values are continuously obtained as a sample value at said second edge.

Claim 8. (Original) The offset detecting device as claimed in claim 7, wherein said sample value selecting part selects one of said two sample values, in which a change of said monitor edge sample value becomes smaller, to be used to generate said monitor sample value.

Claim 9. (Original) The offset detecting device as claimed in claim 7, wherein said sample value selecting part selects one of said two sample values, which is obtained at an earlier timing, to be used to generate said monitor sample value.

Claim 10. (Original) The offset detecting device as claimed in claim 7, wherein said sample value selecting part selects one of said two sample values, which is obtained at a later timing, to be used to generate said monitor sample value.

Claim 11. (Original) An apparatus for reproducing data, comprising:

a first processing part sampling a reproduction signal synchronizing with a first clock which phase is adjusted to a first edge of said reproduction signal from a recording medium, and restoring data in accordance with a maximum-likelihood decode algorithm corresponding to a record rule of a partial response by using a first sample value; and

a second processing part sampling said reproduction signal synchronizing with a second clock which phase is adjusted to a second edge being an opposite side edge of said first edge of said reproduction signal, and restoring data in accordance with said maximum-likelihood decode algorithm by using a second sample value,

wherein said first processing part comprises:

a monitor sample value generating part generating a monitor edge sample value based on said second sample value at said second edge of said reproduction signal;

an offset calculating part calculating, as an offset amount, a change amount of said monitor edge sample value generated by said sample value generating part based on said monitor edge sample value obtained at a predetermined timing; and

a part supplying said offset amount obtained by said offset calculating part to said second processing part,

so that said first processing part and said second processing part restore data based on said reproduction signal and said offset amount.

Claim 12. (Original) The apparatus as claimed in claim 11, wherein each of said first processing part and said second processing part comprises an offset adjusting

part adjusting said first sample value or said second sample value based on said offset amount.

Claim 13. (Currently Amended) The apparatus as claimed in claim 12, wherein each of said first processing part and said second processing part comprises a phase error detecting part detecting a phase error amount of said first clock or said second clock for sampling said reproduction signal based on said offset amount, and adjusts ~~an phase~~ a phase of said first clock or said second clock based on said phase error amount by said phase error detecting part.